

# Executive Summary

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## **FY13 Proposed Capital Improvement Program**

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### **Overview**

The MWRA was created by the Massachusetts legislature in 1985 and since that time has invested over \$7.5 billion to modernize and improve the wastewater and waterworks systems serving its member communities. Since its inception, the Authority has completed most of the major initiatives in the CIP, including the Boston Harbor Program, the MetroWest Water Supply Tunnel, the Carroll Water Treatment Plant, and has made significant progress in the remaining court-mandated projects, most notably the long-term Combined Sewer Overflow (CSO) Control Plan, as well as ongoing rehabilitation, repair, and maintenance of its infrastructure. These capital initiatives have been primarily funded through long-term borrowings, and the debt service on these outstanding bonds represents a significant and growing portion of the Authority's operating budget.

To arrive at the FY13 Proposed CIP, the Authority identified the needs of the programs taking into account the mandated project timeframes and the recommendations of the Master Plan. Of the total expended to date, nearly 80% has funded court mandated projects and the balance has supported waterworks treatment, transmission, distribution, and water supply protection improvements. As the MWRA matures as an agency, a greater proportion of its capital budget is designated for asset protection and water redundancy initiatives, absent new regulatory mandates, to preserve operating assets and insure uninterrupted service. This long-term strategy for capital work is identified in the Authority's Master Plan which was published in 2006 and serves as a road map for inclusion of projects in the CIP in every budget cycle.

The FY13 Proposed Capital Improvement Program (CIP) budget totals \$5.5 billion, of which \$3.4 billion has been expended through FY11 with a remaining balance of \$2.1 billion. It is important to note that the totals represented above do not include the Boston Harbor Project and some other smaller projects removed from the CIP upon completion. These projects totaled approximately \$4.1 billion dollars. As such, the overall Authority CIP budget since inception totals more than \$9.6 billion dollars of which \$7.5 billion has been spent through FY11.

The CSO program is the largest remaining program initiative in terms of spending with an FY13 budget of \$860.7 million of which \$754.7 million has been expended through FY11. The CSO Program accounts for \$312.1 million or 35.1% of projected Authority spending over the FY09-13 period.

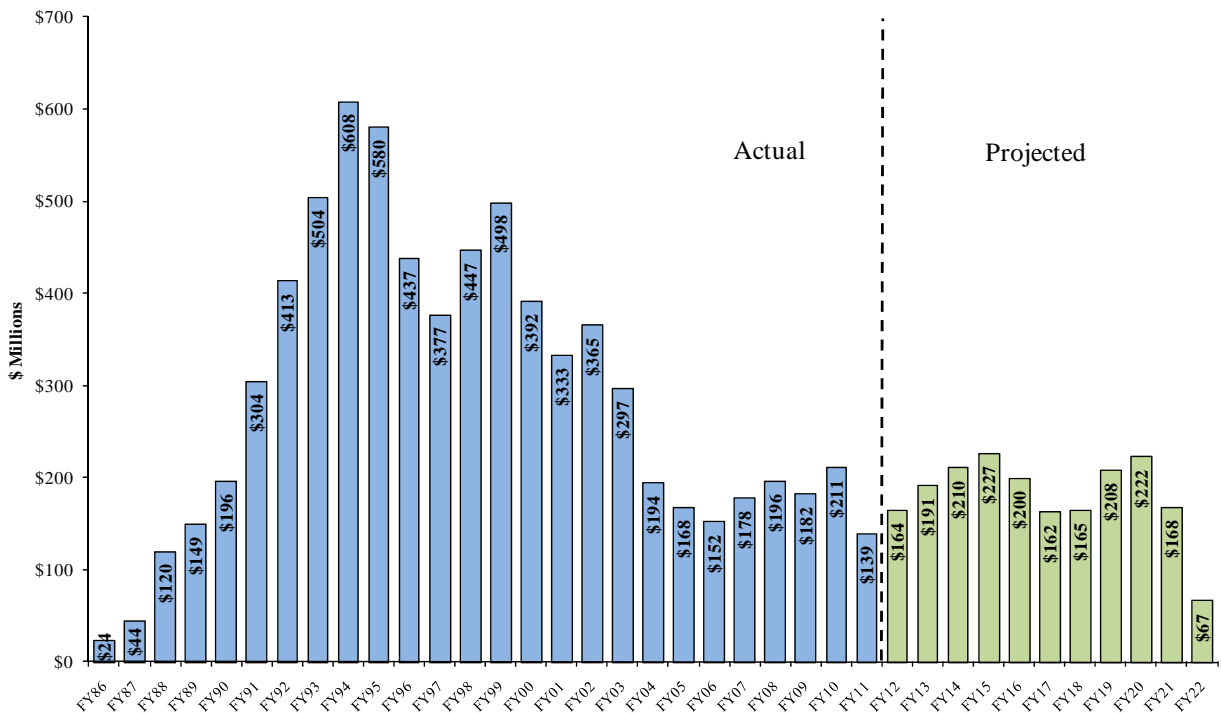
Going forward, asset protection initiatives to preserve operating assets and critical long-term water redundancy projects will be the main focus of the capital program.

Three large projects which will require further review and Board of Director's deliberation, due to the complexity of issues and possible options may alter the shape of the program depending on which strategy is chosen. The projects referenced are:

- Southern Extra High;
- Northern Intermediate High; and
- Rehabilitation of the Headworks (Chelsea Creek, Ward Street, and Columbus Park)

The graph below represents historical CIP spending through FY11 and projected spending to FY22 based on the FY13 Proposed CIP.

### MWRA Capital Spending



As indicated previously, of the total \$7.5 billion expended to date, nearly 80% has funded court mandated projects such as the Boston Harbor Project, the MetroWest Supply Tunnel, the Carroll Water Treatment Plant, and the Combined Sewer Overflow (CSO) program. The mandated projects represent 42.5% of projected FY09-13 spending.

As presented in the table on the following page, Asset Protection and Water Redundancy initiatives account for 31.6% and 16.8% of FY09-13 spending. These percentages grow substantially to 53.5% and 37.3% respectively for the FY14-18 timeframe.

	<b>Total Contract</b>	<b>FY09-13</b>	<b>FY14-18</b>	<b>Beyond 18</b>
Asset Protection	\$ 1,907.6	\$ 281	\$ 516	\$ 475
Carroll WTP	428.0	39.5	15.8	-
Water Redundancy	1,827.6	149.6	359.4	456.0
CSO	836.0	312.1	25.9	0.4
Other	521.4	106.4	47.0	(126.6)
<b>Total</b>	<b>\$ 5,520.7</b>	<b>\$ 888.7</b>	<b>\$ 964.1</b>	<b>\$ 804.9</b>
<b>Asset Protection</b>	<b>34.6%</b>	<b>31.6%</b>	<b>53.5%</b>	<b>59.0%</b>
Carroll WTP	7.8%	4.4%	1.6%	0.0%
<b>Water Redundancy</b>	<b>33.1%</b>	<b>16.8%</b>	<b>37.3%</b>	<b>56.7%</b>
CSO	15.1%	35.1%	2.7%	0.1%
Other	9.4%	12.0%	4.9%	-15.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

### FY09-13 Spending Cap

In June 2008, the Board of Directors established the FY09-13 Base-Line Spending Cap. The Spending Cap anticipated capital expenditures in the FY09-13 timeframe to total \$1.081 billion. Including \$64.8 million for contingency, \$22.4 million for inflation on un-awarded construction projects and a reduction of \$24.8 million for the Chicopee Valley Aqueduct (CVA) projects, the FY09-13 Cap is \$1.144 billion.

**Table 1**

<b>Base-Line Cap</b>		<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>Total FY09-13</b>
	Projected Expenditures	\$230.0	\$251.7	\$224.3	\$196.7	\$178.7	\$1,081.4
Contingency	15.6	13.8	12.0	12.1	11.4	64.8	
Inflation on Unawarded Construction	0.0	0.5	2.8	7.8	11.3	22.4	
Less: Chicopee Valley Aqueduct Projects	(1.2)	(1.9)	(9.1)	(9.5)	(2.9)	(24.8)	
<b>FY09-13 Base-Line Cap</b>	<b>\$244.4</b>	<b>\$264.1</b>	<b>\$230.0</b>	<b>\$207.0</b>	<b>\$198.4</b>	<b>\$1,143.8</b>	

### *The FY13 Proposed CIP FY09-13 Cap Spending*

FY13 is the fifth and final year of the five-year Spending Cap. The FY13 Proposed CIP FY09-13 Cap cash flow totals \$898.8 million which is \$245.0 million or 21.4% lower than the approved Base-Line Cap. The FY09-13 expenditure forecast decreased by \$192.7 million, contingency and inflation decreased by \$48.0 million and \$20.8 million, respectively from the Base-Line Cap. The lower spending is the result of schedule changes, updated cost estimates, and significantly lower awards reflecting the current competitive economic environment.

The FY13 Proposed CIP Cap for FY09-13 complies with both the annual and five-year overall Cap requirements. Please refer to Table 2 on the following page.

**Table 2**

FY13 Proposed		FY09	FY10	FY11	FY12	FY13	Total FY09-13
		Projected Expenditures	\$182.2	\$211.4	\$139.3	\$164.3	\$191.4
Contingency	0.0	0.0	0.0	7.2	9.7	16.8	
Inflation on Unawarded Construction	0.0	0.0	0.0	0.0	1.5	1.5	
Less: Chicopee Valley Aqueduct Projects	(0.6)	(0.5)	(0.9)	(0.8)	(5.4)	(8.2)	
<b>FY13 Proposed FY09-13 Cap</b>		<b>\$181.6</b>	<b>\$210.9</b>	<b>\$138.4</b>	<b>\$170.7</b>	<b>\$197.2</b>	<b>\$898.8</b>

FY13 Proposed - Base-Line Cap		FY09	FY10	FY11	FY12	FY13	Total FY09-13
		Projected Expenditures	(\$47.8)	(\$40.2)	(\$85.0)	(\$32.5)	\$12.7
Contingency	(15.6)	(13.8)	(12.0)	(4.9)	(1.7)	(48.0)	
Inflation on Unawarded Construction	0.0	(0.5)	(2.8)	(7.8)	(9.7)	(20.8)	
Less: Chicopee Valley Aqueduct Projects	0.6	1.4	8.3	8.8	(2.5)	16.6	
<b>FY09-13 Cap (\$ Change)</b>		<b>(\$62.8)</b>	<b>(\$53.2)</b>	<b>(\$91.6)</b>	<b>(\$36.3)</b>	<b>(\$1.2)</b>	<b>(\$245.0)</b>
<b>FY09-13 Cap (% Change)</b>		<b>-25.7%</b>	<b>-20.1%</b>	<b>-39.8%</b>	<b>-17.6%</b>	<b>-0.6%</b>	<b>-21.4%</b>

*FY13 Proposed Cap Cash Flow Comparison to the FY12 Final CIP*

The FY13 Proposed CIP FY09-13 Cap cash flow decreased \$55.9 million or 5.9% from the FY12 Final budget reflecting decreases of \$48.0 million, \$3.4 million, and \$4.6 million for projected spending, contingency, and inflation on unawarded construction, respectively offset by a slight increase for Chicopee Valley Aqueduct projects of \$0.2 million.

**Table 3**

FY13 Proposed		FY09	FY10	FY11	FY12	FY13	Total FY09-13
		Projected Expenditures	\$182.2	\$211.4	\$139.3	\$164.3	\$191.4
Contingency	0.0	0.0	0.0	7.2	9.7	16.8	
Inflation on Unawarded Construction	0.0	0.0	0.0	0.0	1.5	1.5	
Less: Chicopee Valley Aqueduct Projects	(0.6)	(0.5)	(0.9)	(0.8)	(5.4)	(8.2)	
<b>FY13 Proposed FY09-13 Cap</b>		<b>\$181.6</b>	<b>\$210.9</b>	<b>\$138.4</b>	<b>\$170.7</b>	<b>\$197.2</b>	<b>\$898.8</b>

FY12 Final		FY09	FY10	FY11	FY12	FY13	Total FY09-13
		Projected Expenditures	\$182.2	\$211.4	\$151.9	\$165.5	\$225.6
Contingency	0.0	0.0	0.0	8.4	11.9	20.3	
Inflation on Unawarded Construction	0.0	0.0	0.0	1.0	5.1	6.2	
Less: Chicopee Valley Aqueduct Projects	(0.6)	(0.5)	(0.6)	(0.4)	(6.2)	(8.4)	
<b>FY12 Final FY09-13 Cap</b>		<b>\$181.6</b>	<b>\$210.9</b>	<b>\$151.3</b>	<b>\$174.5</b>	<b>\$236.4</b>	<b>\$954.7</b>

FY13 Proposed - FY12 Final		FY09	FY10	FY11	FY12	FY13	Total FY09-13
		Projected Expenditures	\$0.0	\$0.0	(\$12.6)	(\$1.2)	(\$34.2)
Contingency	0.0	0.0	0.0	(1.2)	(2.2)	(3.4)	
Inflation on Unawarded Construction	0.0	0.0	0.0	(1.0)	(3.6)	(4.6)	
Less: Chicopee Valley Aqueduct Projects	0.0	0.0	(0.3)	(0.3)	0.8	0.2	
<b>FY09-13 Cap (\$ Change)</b>		<b>\$0.0</b>	<b>\$0.0</b>	<b>(\$12.9)</b>	<b>(\$3.8)</b>	<b>(\$39.2)</b>	<b>(\$55.9)</b>
<b>FY09-13 Cap (% Change)</b>		<b>0.0%</b>	<b>0.0%</b>	<b>-8.5%</b>	<b>-2.2%</b>	<b>-16.6%</b>	<b>-5.9%</b>

*Highlights of changes from FY12 Final for the FY09-13 Cap Period  
(please refer to Appendix 4 for detailed project information)*

**Wastewater System Improvements:**

Wastewater spending in the FY09-13 period decreased by \$28.1 million due to the combined impact of revised schedules and cost estimates of certain projects.

Interception and Pumping (I&P): (\$19.7) million

- I&P Asset Protection total project spending decreased by \$17.0 million in the FY09-13 period primarily due to revised schedule and sequencing for the Headworks Upgrades projects, several schedule changes including NI Electric & Grit/Screens Conveyance Construction, Alewife Brook Pump Station Construction Rehabilitation, Mechanical and Electrical Improvements, Pump Station/CSO Condition Assessment, Caruso Pump Station Improvements, and the deletion of Section 156 Owners Representative and Interceptor Renewal #1 Design contracts. This decrease was partially offset by a higher award for Section 156 Rehabilitation Design/Build and a FY13 new project for Rehabilitation of Sections 186 and 4 Construction.
- Wastewater Meter System-Equipment Replacement project spending decreased by \$1.2 million primarily due to updated schedules.
- Wastewater Central Monitoring project spending decreased by \$0.6 million primarily due to updated schedules.

Treatment: (\$16.4) million

- Deer Island Treatment Plant Asset Protection total project spending in the FY09-13 period decreased by \$17.5 million primarily due to lower award for North Main Pump Station VFD Replacement Construction and several project schedule changes including Miscellaneous VFD Replacements, Digester & Storage Tank Rehabilitation Design/Engineering Services During Construction, LOCAT Scrubber Replacement Construction, Digester Sludge Pump Replacement, Electrical Equipment Upgrade Phase 5. These were partially offset by a FY13 new project for Roof Replacement Phase 3 and various updated cost estimates.
- Clinton Wastewater Treatment Plant project spending increased by \$1.1 million due to revised scope and cost estimates for Clinton Aeration Improvements and Clinton Plant-Wide Concrete projects.

Residuals: (\$1.3) million

- Residuals Asset Protection total project spending decreased by \$1.3 million in the FY09-13 period primarily due to revised schedules for Residuals Facility Plan/Environmental Impact Report and Residuals Facilities Upgrade Design contracts.

Combined Sewer Overflow: \$6.3 million

- Reserved Channel Sewer Separation total project spending in the FY09-13 period increased by \$5.9 million due to updated spending projections.
- South Dorchester Bay Sewer Separation (Commercial Point) project spending increased by \$0.8 million due to updated spending projections.
- Cambridge Sewer Separation project spending increased by \$0.7 million primarily due to updated change order estimates for contract 12 and CAM400.
- CSO Support project spending decreased by \$0.7 million due to successful re-negotiation of the Conley Terminal Easement Agreement.
- Brookline Sewer Separation project spending decreased by \$0.5 million due to updated cost estimate for MWR010 work partially offset by additional construction services.

Other Wastewater: \$3.1

- I/I Local Financial Assistance Program total project spending in the FY09-13 period increased by \$3.1 million due to the timing of loan distributions and repayments.

***Waterworks System Improvements:***

Waterworks System Improvements spending in the FY09-13 period decreased by \$15.0 million as project spending was shifted outside the Cap. This is primarily due to revised schedules and cost estimates for several projects in Drinking Water Quality Improvements, Transmission, and Distribution and Pumping programs.

Drinking Water Quality Improvements: (\$5.7) million:

- Spot Pond Storage Facility total project spending decreased in the FY09-13 period by \$11.6 million due to the lower award of the Design/Build contract.
- Carroll Plant project spending increased by \$6.1 million due to updated cash flow for the Ultraviolet Disinfection Construction and the addition of two FY13 new projects for Technical Assistance contracts. This increase was partially offset by a revised schedule for Ancillary Modifications Construction 2 contract.

Transmission: (\$6.9) million

- Winsor Station Pipeline total project spending in the FY09-13 period decreased by \$7.9 million due to revised scope and schedules for Winsor Station Rehabilitation & Improvements and Hatchery Pipeline contracts.
- Metrowest Tunnel project spending increased by \$3.8 million due to accelerated schedule for CP-6A Lower Hultman Rehabilitation. This was partially offset by revised schedule for CP-6B Upper Hultman Rehabilitation.
- Dam Projects project spending decreased by \$1.3 million due to lower award for Dam Safety Modifications and Repairs contract.
- Long Term Redundancy project spending decreased by \$1.0 million primarily due to schedule changes for Cosgrove Redundancy Pump Station Design/Engineering Services During Construction/Resident Inspection and Sudbury Aqueduct Massachusetts Environmental Protection Agency (MEPA) review contracts.

Distribution and Pumping: (\$3.4) million

- Spot Pond Supply Mains Rehabilitation total project spending in the FY09-13 period decreased by \$1.9 million due to revised schedule for Section 4 Webster Ave Bridge Pipe Rehabilitation Design & Construction and Section 50 Pipe Rehabilitation Design/Engineering Services During Construction/Resident Inspection contracts.
- Northern Intermediate High Redundancy & Storage project spending decreased by \$1.1 million primarily due to updated schedule for Section 89 & 29 Redundancy Construction Phase 1 and lower award for Reading Stoneham Interconnections.
- Weston Aqueduct Supply Mains (WASM) project spending decreased by \$0.8 million primarily due to revised schedule for WASM 3 Design/Construction Administration/Resident Inspection partially offset by revised cash flow for Section 36/Waltham Connection Design/Construction Administration/Resident Inspection.

Other Waterworks: \$1.1 million

- Local Water Pipeline Improvement Program total project spending increased in the FY09-13 period by \$1.4 million due to revised cash flows for Community Loan programs.

***Business and Operations Support:***

Business and Operations Support spending in the FY09-13 period decreased by \$5.0 million.

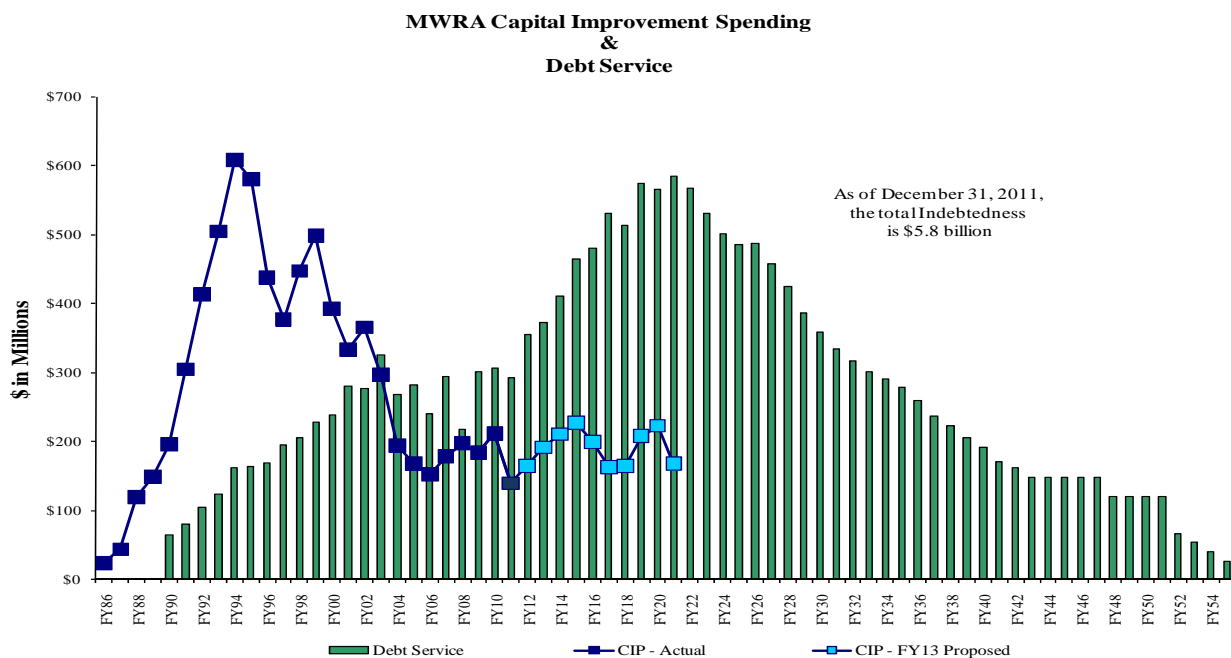
- Alternative Energy Initiatives total project spending decreased by \$1.7 million in the FY09-13 period primarily due to schedule changes for Wachusett Hydroelectric Design and Construction and Deer Island Wind Phase 2.

- Business Systems Plan spending decreased by \$1.0 million due to reduction in budgets for the several completed phases including Phase VI and Cyber Security and revised schedule for Laboratory Instrument Data Management. This was partially offset by an increase for Information Technology Continuity future initiatives.
- MWRA Facilities Management project spending decreased by \$0.9 million due to revised schedule for Deer Island Administrative Building project.

## Outstanding Debt and Debt Management

### Capital Spending versus Debt Service

The following graph illustrates the relationship between the MWRA’s Capital Improvement Program updated with the FY13 Proposed CIP spending projections and outstanding debt as of December 31, 2011.



The \$7.5 billion spent on MWRA’s modernization efforts to date, has relied heavily on debt financing. Total debt as of December 2011 reached \$5.8 billion consisting of senior and subordinated debt, as well as Tax-Exempt Commercial Paper. The MWRA enjoys strong unenhanced senior debt ratings of Aa1, AA+, and AA+ from Moody’s, S&P, and Fitch, respectively. The MWRA expects to finance the capital expenditures identified in the MWRA CIP through the issuance of its revenue bonds as provided in the MWRA Act, and from the proceeds of federal and state grants and operating revenues. As of December 31, 2011, the MWRA’s indebtedness included

\$3.4 billion of senior revenue bonds, \$1.2 billion of subordinated revenue bonds, \$1.1 billion of loans with the SRF, and \$144 million of tax-exempt commercial paper notes.

The Authority's debt service obligation as a percent of total expenses has increased from 36% in 1990 to nearly 60% in the FY12 Final Current Expense Budget.

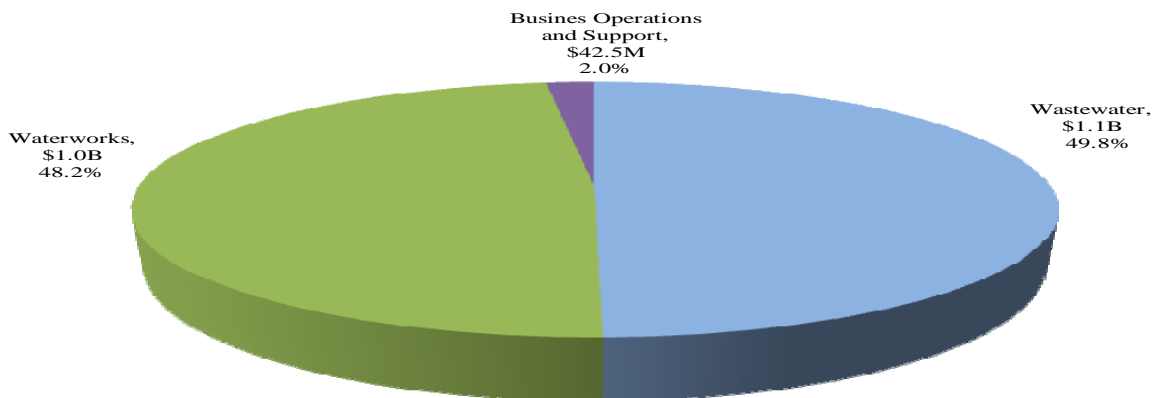
Given that the majority of the Rate Revenue Requirement is driven by debt service increases, the coming years represent significant challenges for the Authority. Through FY21, the Rate Revenue Requirement increases an average of \$36 million per year of which approximately \$27 million annually is related to Capital Expenses.

The Authority has actively managed its debt structure to take advantage of favorable interest rates. Tools used by the MWRA to lower borrowing costs and manage rates include maximizing use of the subsidized State Revolving Fund (SRF) debt, issuance of variable rate debt, current and advanced refunding of outstanding debt, the use of surplus revenues to defease debt, and swap agreements. The MWRA also uses its Tax Exempt Commercial Paper program to minimize the financing cost of construction in process.

In June 2011, MWRA executed a \$32.1 million defeasance to achieve debt service reductions between FY12 and FY15. These actions resulting in debt service reductions of \$1.4 million in FY12 and FY13, \$26.4 million in FY14 and \$4.8 million in FY15.

### **FY13 Proposed CIP Expenditures**

The MWRA's total capital budget is \$5.5 billion with \$3.4 billion spent through FY11 and \$2.1 billion remaining to be expended. Of the remaining spending, Wastewater System Improvements represent \$1.1 billion or 49.8%, Waterworks System Improvements are \$1.0 billion or 48.2%, and Business and Operations Support are \$42.5 million or 2%.



The FY13 Proposed CIP (without contingency) includes planned expenditures of \$164.3 million and \$191.4 million for FY12 and FY13, respectively, and total projected expenditures of \$888.7 million for the FY09-13 timeframe.

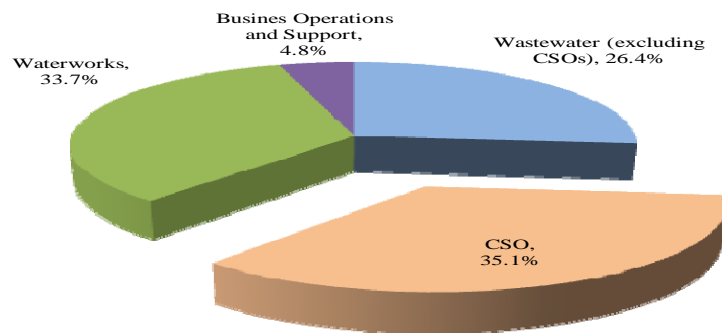
Table 4 below represents the projected spending by the major program categories for the FY09-13 timeframe:

**Table 4**

Program (\$ in millions)	Total Contract Amount	Payments Thru FY11	Balance 6/30/11	FY09	FY10	FY11	FY12	FY13	5-Year Total FY09-13
<b>Wastewater System Improvements</b>	<b>\$2,643.3</b>	<b>\$1,586.0</b>	<b>\$1,057.3</b>	<b>\$123.7</b>	<b>\$152.7</b>	<b>\$92.0</b>	<b>\$90.7</b>	<b>\$87.7</b>	<b>\$546.8</b>
Interception & Pumping	\$819.9	\$512.6	\$307.3	\$6.8	\$2.5	\$15.1	\$8.0	\$8.5	\$41.0
Treatment	\$628.1	\$152.3	\$475.7	\$14.7	\$56.0	\$29.8	\$27.7	\$45.6	\$173.8
Residuals	\$211.7	\$64.2	\$147.6	\$0.0	\$0.4	(\$0.0)	\$0.1	\$0.6	\$1.1
CSO	\$860.7	\$754.7	\$106.0	\$99.4	\$89.3	\$43.8	\$50.4	\$29.2	\$312.1
Other	\$122.9	\$102.2	\$20.6	\$2.7	\$4.5	\$3.3	\$4.5	\$3.8	\$18.9
<b>Waterworks System Improvements</b>	<b>\$2,769.3</b>	<b>\$1,744.2</b>	<b>\$1,025.0</b>	<b>\$52.9</b>	<b>\$50.1</b>	<b>\$38.9</b>	<b>\$64.4</b>	<b>\$93.2</b>	<b>\$299.4</b>
Drinking Water Quality Improvements	\$652.2	\$541.3	\$110.9	\$17.8	\$12.4	\$2.4	\$19.8	\$41.8	\$94.3
Transmission	\$1,163.2	\$719.5	\$443.7	\$6.3	\$15.7	\$24.6	\$22.0	\$19.4	\$88.1
Distribution and Pumping	\$910.4	\$354.0	\$556.4	\$19.4	\$16.5	\$12.7	\$13.3	\$13.9	\$75.8
Other	\$43.5	\$129.4	(\$86.0)	\$9.3	\$5.5	(\$0.9)	\$9.3	\$18.1	\$41.3
<b>Business &amp; Operations Support</b>	<b>\$108.1</b>	<b>\$65.7</b>	<b>\$42.5</b>	<b>\$5.7</b>	<b>\$8.7</b>	<b>\$8.4</b>	<b>\$9.2</b>	<b>\$10.5</b>	<b>\$42.5</b>
<b>Total MWRA</b>	<b>\$5,520.7</b>	<b>\$3,395.9</b>	<b>\$2,124.7</b>	<b>\$182.2</b>	<b>\$211.4</b>	<b>\$139.3</b>	<b>\$164.3</b>	<b>\$191.4</b>	<b>\$888.7</b>

As shown above, the Combined Sewer Overflow (CSO) program continues to drive spending in the FY09-13 timeframe, accounting for \$312.1 million or 35.1% of total projected spending. Staff anticipates that by the end of the Cap period, more than 96% of the total CSO program will be completed. For the remainder of the Cap period, specifically FY12 and FY13, the largest spending is projected for the Reserved Channel, Brookline, and Cambridge CSO projects, the Carroll Water Treatment Plant Ultra-violet Disinfection, Spot Pond Design/Build, Lower Hultman (CP6A), and Deer Island's North Main Pump Station VFD Replacement and Digester Module 1&2 Pipe Replacement.

The graph below illustrates a breakdown of the major program spending percentages for the FY09-13 period.



Please refer to Attachment C for a more detailed project listing and projected cash flows.

### **FY13 Master Plan and the FY13 Proposed CIP**

In every budget cycle, the Master Plan serves as a roadmap for inclusion of new projects. All projects included are high priority infrastructure improvement projects. During FY13, 2 new projects were added from the Master Plan totaling \$1.1 million of which \$0.3 million is projected to be expended in the FY09-13 timeframe.

The FY13 Proposed CIP includes a total of 116 new projects/sub-phases with an estimated cost of \$1.1 billion that have been added to the CIP since the Master Plan was adopted.

<b>Budget Cycle</b>	<b>Project/Sub-phase</b>	<b>\$ in Millions</b>
FY08 Final	67	\$955.0
FY09 Final	11	\$31.3
FY10 Final	14	\$58.7
FY11 Final	9	\$19.7
FY12 Final	13	\$38.9
FY13 Proposed	2	\$1.1
<b>Total From Master Plan</b>	<b>116</b>	<b>\$1,104.7</b>

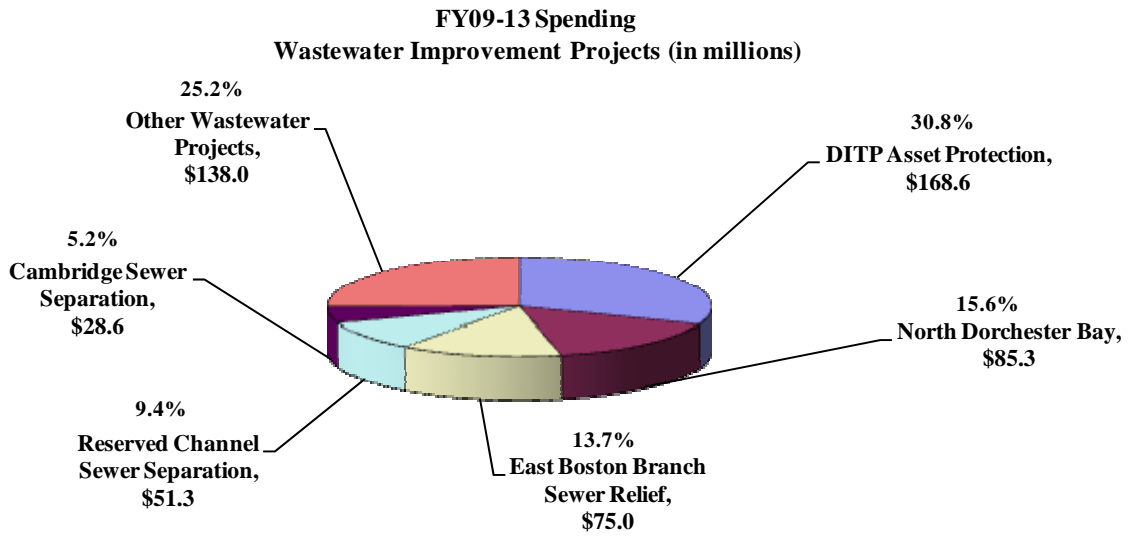
See Appendix 5 Master Plan/CIP Status for more details.

### **FY13 Proposed CIP FY09-13 Spending**

Wastewater System Improvements spending continues to drive CIP spending with \$546.8 million to be expended over the FY09-13 timeframe. The CSO program represents the largest program initiative in terms of spending, with \$312.1 million, or 35.1% of total spending during the FY09-13 period. This federally mandated program is scheduled to be completed by December 2015 followed by a performance report due December 2020. Waterworks System Improvements projects expenditures total \$299.4 million in the FY09-13 timeframe.

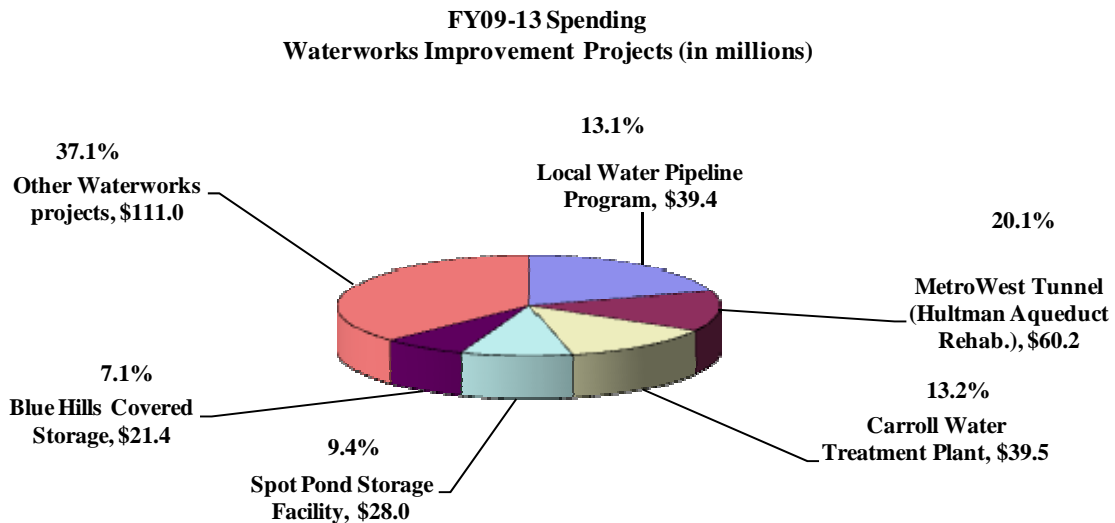
It is important to emphasize that the majority of spending within the Wastewater and Water capital programs is concentrated in several larger projects with significant spending in the FY09-13 timeframe. These projects are either currently under construction or soon to be awarded. The top five projects for the Wastewater program total \$408.8 million for FY09-13 period and represent 74.8% of the \$546.8 million total program.

The breakdown of the \$546.8 million program by the major projects is illustrated below:



Similarly, the top five projects for the Waterworks program total \$186.9 million for FY09-13 and represent 62.4% of the \$299.4 million total program.

The breakdown of the \$299.4 million program by the major projects is illustrated on the graph below:



Combined the Top 10 Wastewater and Water projects account for nearly 70% of total FY09-13 spending.

## Major Planned Spending for Fiscal Year 2013

Capital spending in FY13 is estimated to be \$191.4 million. Spending will be driven by several large projects, including the 10 projects listed below, which account for over 76% of budgeted FY12 spending:

**Table 5**

	<b>Total Contract Amount</b>	<b>FY13 Planned Spending</b>
206 DI Treatment PI Asset Protection	\$ 583.3	\$ 43.0
542 Carroll Water Treatment Plant	428.0	19.9
550 Spot Pond Storage Facility	59.2	17.5
765 Local Water Pipeline Improvement	-	16.9
359 Reserved Channel Sewer Separation	62.3	12.9
346 Cambridge Sewer Separation	56.4	11.3
604 MetroWest Tunnel	711.6	9.9
145 Facility Asset Protection	254.7	5.0
722 NIH Redundancy & Storage	82.5	4.9
730 Weston Aqueduct Supply Mains	276.2	4.6
<b>Top 10 Spending in FY13</b>	<b>\$ 2,514.2</b>	<b>\$ 145.9</b>
<b>FY13 Spending</b>	<b>\$ 5,520.7</b>	<b>\$ 191.4</b>

### Highlights of Project Changes from the FY12 Final CIP to the FY13 Proposed CIP

The FY13 Proposed CIP represents updated spending and schedules for projects contained in the FY12 Final CIP and new spending on 7 projects and sub-phases which total \$10.5 million. These additional projects and sub-phases represent those capital initiatives outside of the FY12 Final CIP that staff recommends as most essential to ensure reliable service to MWRA's customers.

The total FY13 Proposed CIP increased \$52.4 million or 1.0% above the FY12 Final CIP approved by the Board in June 2011, however, spending on projects in the FY09-13 Cap period decreased by \$48.0 million. The increase is mainly due to updated cost and inflation estimates of \$65.9 million and new project requests totaling \$10.5 million mostly for Asset Protection initiatives offset by lower project awards versus budget of \$29.9 million. Please refer to the next page for the highlighted FY13 new projects.

Table 6 on the following page describes the dollar and percent changes by major program between the FY12 Final and the FY13 Proposed CIP and for the FY09-13 timeframe.

**Table 6**

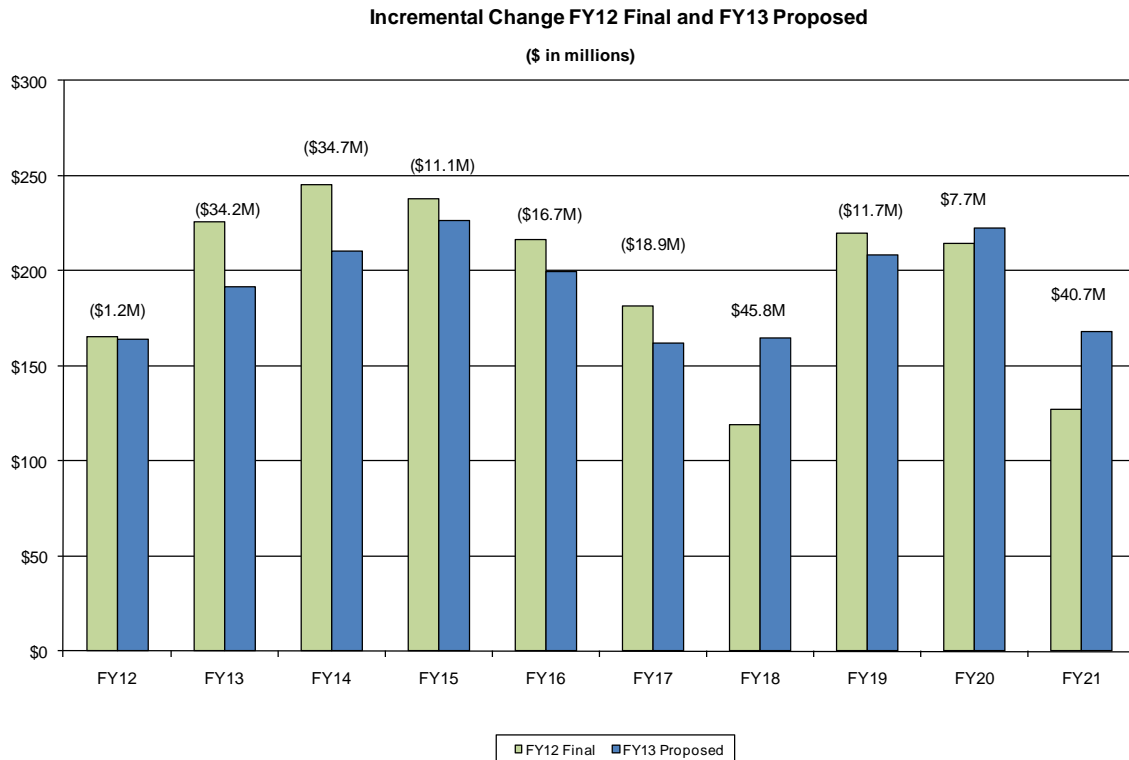
	<b>FY12 Final</b>	<b>FY13 Proposed</b>	<b>\$ change</b>	<b>% change</b>	<b>FY09-13 \$ change</b>	<b>FY09-13 % change</b>
Wastewater Systems Improvements	\$2,625.4	\$2,643.3	\$17.9	0.7%	-\$28.1	-4.9%
Waterworks System Improvements	\$2,735.7	\$2,769.3	\$33.5	1.2%	-\$15.0	-4.8%
Business and Operations Support	\$107.1	\$108.1	\$1.0	0.9%	-\$5.0	-10.5%
<b>Total MWRA without contingency</b>	<b>\$5,468.3</b>	<b>\$5,520.7</b>	<b>\$52.4</b>	<b>1.0%</b>	<b>-\$48.0</b>	<b>-5.1%</b>

The following worksheet describes the major dollar changes by project between the FY12 Final and the FY13 Proposed CIP and for the FY09-13 timeframe. The shaded projects represent the new projects added to the FY13 Proposed CIP.

**Comparison of Major Changes FY13 Proposed and FY12 Final CIP**

<b>Project</b>	<b>FY12 Final</b>	<b>FY13 Proposed</b>	<b>Overall Impact</b>	<b>FY09-13 Impact</b>	<b>Beyond Cap</b>	<b>Notes</b>
Rehabilitation of Section 4, 5, and 6 of the North Metropolitan Sewer - Design	\$0.0	\$1.0	\$1.0	\$0.0	\$1.0	New FY13 project
Rehabilitation of Section 4, 5, and 6 of the North Metropolitan Sewer - Construction	\$0.0	\$4.0	\$4.0	\$0.0	\$4.0	New FY13 project
Rehabilitation of Section 186 and 4 - Construction	\$0.0	\$3.0	\$3.0	\$0.4	\$2.6	New FY13 project
Deer Island Roof Replacement - Phase III	\$0.0	\$1.0	\$1.0	\$0.2	\$0.8	New FY13 project
Electrical Distribution Upgrade at Southboro Facility	\$0.0	\$0.4	\$0.4	\$0.0	\$0.4	New FY13 project
Technical Assistance 7	\$0.0	\$0.6	\$0.6	\$0.2	\$0.4	New FY13 project
Technical Assistance 8	\$0.0	\$0.6	\$0.6	\$0.2	\$0.4	New FY13 project
Deer Island - North Main Pump Station VFD Replacement - Construction	\$46.0	\$24.1	-\$21.9	-\$10.5	-\$11.4	Lower award vs budget
Spot Pond Design Build	\$61.7	\$49.4	-\$12.3	-\$11.5	-\$0.8	Lower award vs budget
Dam Safety Modifications	\$4.7	\$2.2	-\$2.5	-\$1.3	-\$1.2	Lower award/elimination of work
North Main Pump Station Harmonic Filters	\$0.0	\$6.0	\$6.0	\$0.0	\$6.0	New sub-phase for VFD project
Facility Asset Protection - Headworks Upgrades Construction	\$138.7	\$163.7	\$25.0	-\$10.5	\$35.5	Updated cost estimates, inflation, and revised scheduling
West Roxbury Tunnel	\$46.9	\$11.5	-\$35.4	\$0.0	-\$35.4	Revised scope
DITP Fire Alarm System - Construction	\$5.5	\$16.0	\$10.5	\$0.6	\$10.0	Revised scope
Schedule Shifts	\$0.0	\$0.0	\$0.0	-\$1.3	\$1.5	Schedule shifts
Other	\$0.0	\$0.0	\$72.4	-\$14.4	\$86.8	Updated cost, inflation, and scope changes.
<b>TOTAL</b>	<b>\$303.5</b>	<b>\$283.4</b>	<b>\$52.4</b>	<b>-\$48.0</b>	<b>\$100.7</b>	

The following graph displays the variance by year of the projected spending in the FY12-FY21 timeframe between the FY12 Final CIP and the FY13 Proposed CIP, demonstrating the significant changes that occur during a year.



### Contingency

Contingency for each fiscal year is incorporated into the Capital Improvement Program to fund the uncertainties inherent in construction programs. MWRA uses a contingency budget to cover these costs in the event they exceed their estimated value. The contingency budget is calculated as a percentage of budgeted expenditure outlays. Specifically, contingency is 7% for non-tunnel projects and 15% for tunnel projects. The total contingency budget for the CIP (FY13-FY22) is \$123.6 million, with \$16.8 million allocated to the FY09-13 timeframe.

	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	Total
Contingency	\$ 9.7	\$ 13.3	\$ 15.5	\$ 13.5	\$ 11.1	\$ 11.6	\$ 14.4	\$ 14.2	\$ 13.5	\$ 6.9	\$ 123.6

### Future Risk Factors

Due to the very nature of the Capital Improvement Program, there will be changes to projects over time due to schedule shifts, revisions to projects' scope, cost increases or decreases, environmental mandates, etc. In every budget cycle, the MWRA re-evaluates capital improvement needs and estimates project costs based on the latest available information. It is important to note that there are several risk factors which could increase spending.

There are still potential projects or required spending increases which are not yet funded as part of the FY13 Proposed CIP which are highlighted below:

- The Cross Harbor Cable may need a deeper installation or protective material as part of the harbor dredging project; additional costs could be as much as \$20 million;
- The Chelsea Creek dredging initiative could cost as much as \$10 million;
- Residual Asset Protection or the funding to rehabilitate or replace the existing Residuals Plant needs to be determined; and
- New regulatory mandates could represent potential risk for increased future spending.

### **Project Level Budget Summaries and Detail of Changes**

Information on individual project budgets and detail of changes is provided in the supplemental appendices attached to this document.